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3M INNOVATIVE PROPERTIES COMPANY			DESAI, ANISH P	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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DETAILED ACTION

1. Applicant's arguments in response to the Office action dated 04/11/08 have been fully considered.
2. Claims 1-27, 29, 30, 42, 43, and 46 are cancelled. Claims 28, 31-41, 44, 45, and 47 are pending. It is noted that Applicant has amended the independent claim 45 to include the limitations of claims 24, 26, 27, 30, and 43.
3. The 35 USC Section 112-first paragraph rejections to claims 24, 26-28, 30-45, and 47 are withdrawn in view of the present amendment and response.
4. It is noted that Applicant has stated in his/her response "The Babu et al. reference cited as WO 93/1184. The correct reference number is US 5,112,882" (see page 6 of 08/07/08 amendment). Applicant believes that the Examiner has cited an incorrect reference for Babu et al. However, the Examiner respectfully submits that he has not cited an incorrect reference. The reference of Babu et al. that is relied upon in the rejection is WO 93/11184 to Babu et al. **NOT** US 5,112,882 to Babu et al. (please see pages 4-9 of 04/11/08 Office Action).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 28, 31, 37-41, 44, 45, and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Babu et al. (WO 93/11184) in view of Davison (US 3,970,771) and Bragole (US 4,859,540).

6. Regarding claim 45, Babu teaches a PSA tape and a method of making the PSA tape. The PSA tape of Babu includes a radiation curable PSA that is applied onto a support (abstract and page 17 lines 11-24). Additionally, Babu discloses that in some applications primers may be useful for improving the adhesion of the adhesive to some substrates.

7. According to Babu "Useful primers for the practice of the present invention include triblock copolymer of styrene-ethylene/butylene-styrene grafted with maleic anhydride (Kraton G-1901X copolymer, Shell Chemical Co.) **and a combination of** amorphous polypropylene [reads on Applicant's non-halogenated polyolefin comprising C2-C30 alpha olefin monomer] and Kraton G1901X copolymer [reads on Applicant's "wherein the maleated thermoplastic elastomer is...styrene-ethylene-butene-styrene type block copolymer]." (page 17 lines 34-37 to page 18 lines 1-3). Moreover, Babu discloses that the PSA of his/her invention includes crosslinking agents such as an aldehyde or ketone (see page 11, lines 25-35) and that the PSA can be crosslinked using actinic radiation (page 13 lines 35-40). Additionally, Babu discloses PSAs comprising alpha-olefins (see abstract).

8. With respect to claim 45, it is submitted that the aforementioned disclosure of Babu meets the claim limitations "A method of making tape comprising...a non-halogenated polyolefin, wherein C2-C30 alpha-olefin monomer" and the step (c)

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“applying a pressure sensitive adhesive atop the primer, wherein the pressure sensitive adhesive is based on...wherein the second crosslinking agent...sym-traizine”.

Additionally, as to step (d), Babu discloses crosslinking of adhesive using radiation (pages 13-14).

9. Regarding claim 45, Babu is silent with respect to teaching the primer comprising a hydrocarbon resin having Tg of between about 0°C and about 100°C, the primer comprising a first crosslinking agent that is activated by actinic radiation and the type of the first crosslinking agent, and step (d) as relates to applying actinic radiation to crosslink the primer.

10. However, Davison discloses a substrate that is coated with mixed resin primer comprising a block copolymer. The primer of Davison comprises hydrogenated block copolymer and a resin that is compatible with the non-elastomeric blocks of the copolymer and, in some instances including carboxylated resin (abstract). Further, Davison's invention is related to improving the bonding between "low energy" substrate such as polyolefins and coatings using the primer of his invention (see Background of the Invention part of Davison). Moreover, Davison discloses that the end block compatible resins are coumarone-indene (identified by Cumar LX 509 see Example 1 of Davison), olefinic hydrocarbon resin etc. (see column 2 lines 39-57). The Cumar LX 509 resin as taught by Davison has Tg of about 88°C as evidenced by column 5 lines 54-58 of Hansen (US 4,141,876).

11. It is noted that the primer of Babu includes block copolymers which are used to improve the adhesion of the adhesive to substrates such as polyolefins. The secondary

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reference of Davison is trying improve the bonding between "low energy" substrate such as polyolefins and coatings using primer of his invention (see Background of the Invention). Further, the primer of Davison includes block copolymers and resin such as coumarone-indene.

12. Therefore, regarding claim 45, it would have been obvious to use the resin such as coumarone-indene with Tg of between 0°C and 100°C in the primer of Babu, motivated by the desire to form a primer composition that can be useful in bonding substrates of Babu to the PSA.

13. Additionally, regarding claim 45, Babu as modified by Davison is silent as to teaching of providing a primer with a first crosslinking agent that may be activated by actinic radiation and a method step (d) as relates to applying actinic radiation to crosslink the primer.

14. However, Bragole discloses chlorinated polyolefins or other halogen containing products alone or in admixture with one another that are coated as primers on a solid or foamed polyolefin surface. The primed surface of Bragole is irradiated and an adhesive is bonded to the primer (abstract). According to Bragole "It is believed that the primer becomes engrafted to the polyolefin substrate surface and cross-links during continual exposure to irradiation...The net effect is (1) a stronger union of the primer to the polyolefin surface than is possible without irradiation...adhesives." (column 2 lines 7-20). Further, Bragole discloses that the primer may be irradiated with photosensitizers such as benzophenone, para-chlorobenzophenone (column 10 lines 30-43), which reads on Applicant's first crosslinking agents such as ketone.

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15. Thus regarding claim 45, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add the crosslinking agent as taught by Bragole and irradiation process as employed in Bragole to crosslink the primer layer, motivated by the desire to improve the adhesion between the substrate and the primer.

16. As to claim 28, while Babu does not explicitly teach polyhexene or polyoctene in primer, however it is noted that the primer of Babu generally includes polyolefin such as polypropylene, therefore in the absence of unexpected results choosing olefins such as polyhezene or polyoctene would involve routine skill in the art, motivated by the desire to form a suitable primer.

17. Regarding claim 31, in absence of unexpected results selecting a particular crosslinking agent and employ it to crosslink a primer layer would involve a routine skill in the art depending on the intended use of such a primer.

18. With respect to claims 37-39, abstract, page 4 lines 25-37, page 7 lines 1-17 and lines 30-35 of Babu discloses these limitations.

19. Regarding claim 40, this limitation is taught at page 5 lines 12-20 of Babu.

20. As to claim 41, page 14 lines 35-37 to page 15 lines 1-38 discloses addition of tackifiers in PSA of Babu.

21. With respect to claim 44, page 17 lines 25-30 of Babu disclose this limitation.

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22. Claims 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Babu et al. (WO 93/11184) in view of Davison (US 3,970,771) and Bragole (US 4,859,540) as applied to claim 45 above, and further in view of Mori et al. (US 5,037,885).

23. The invention of Babu as modified by Davison and Bragole is previously disclosed.

24. Babu is silent as to teaching the primer further comprising epoxy resin as claimed in claims 32 and 33.

25. However, Mori discloses a two part primer composition comprising at least one block copolymer such as SEBS that is copolymerized with maleic anhydride and a curing component comprising an epoxy resin having two or more functional groups, which has excellent heat-resistance adhesion and durable adhesion and it is suitable for adhering between polyolefinic substances or between polyolefinic substance and other organic substance (abstract). The epoxy resin as taught at column 2 lines 34-55 of Mori reads on the epoxy resin as claimed in claims 32 and 33.

26. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add the epoxy resin in the primer of Babu motivated by the desire to improve the adhesion of the primer to the polyolefin substrates.

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27. Claims 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Babu et al. (WO 93/11184) in view of Davison (US 3,970,771) and Bragole (US 4,859,540) as applied to claim 45 above, and further in view of Groves (US 5,677,376).

28. The invention of Babu modified by Davison and Bragole is previously disclosed.

29. Babu is silent as to teaching primer further comprising multifunctional acrylate, fumed amorphous silica, and filler.

30. However, Groves discloses a polymer blend comprising a block copolymer and (b) a polymer comprising a polymerization reaction product of two or more mono-ethylenically unsaturated monomers in which at least one of the monomers is acrylic or methacrylic ester...at least one of the monomers is a nitrogen-containing monomer (see abstract). The polymer blends of Groves are useful as adhesives, primers, ink etc. (column 1 lines 10-22). Additionally blends of Groves include filler such as silica (column 4 lines 35-36), which is believed to be fumed amorphous silica as claimed or such is obvious variants of silica as taught by Groves. The polymers (b) as taught by Groves read on multifunctional acrylate or such is obvious variant of acrylic polymers taught by Groves.

31. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the multifunctional acrylate, filler, and silica as taught by Groves in the primer of Babu as modified by Davison and Bragole, motivated by the desire to form a primer that is useful in bonding the PSA and substrate.

Response to Arguments

32. Applicant's arguments filed on 08/07/08 have been fully considered but they are not persuasive.

33. With respect independent claim 45, specifically with respect to the step (d) of claim 45, Applicant argues "A tape having a pressure sensitive adhesive and a primer *that are crosslinked to each other* is not taught or even suggested by the references, or combinations thereof, as cited in the Office Action of April 11, 2008." (page 6 of 08/07/08 amendment). The Examiner respectfully disagrees for the following reasons:

34. It is noted that the step (d) of claim 45 recites "applying actinic radiation to crosslink the primer and the pressure sensitive adhesive". This step does not require that the **PSA and the primer be crosslinked to each other** as asserted by Applicant. This step (d) of claim 45 as currently recited only requires that the PSA is crosslinked by applying actinic radiation and the primer is crosslinked by applying actinic radiation. Therefore, the Examiner respectfully submits that Applicant's arguments are not commensurate in scope with the claims. Accordingly, Applicant's arguments are not found persuasive.

35. The Examiner respectfully reminds Applicant that, if applicant wishes to recite that the PSA and the primer are crosslinked **to each other** in the claim; such a recitation must have an appropriate support in the specification as originally filled.

Conclusion

36. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 5,480,939 to Jackson discloses a primer having polyhexene. US 5,846,653 to Hawkins discloses PSA layer and a primer layer. Further, Hawkins disclose crosslinking agent such as that of claim 31. US 4,731,273 to Bonk discloses a primer having multifunctional acrylates such as trimethylolpropane triacrylate.

37. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

38. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

39. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANISH DESAI whose telephone number is (571)272-6467. The examiner can normally be reached on Monday-Friday, 8:00AM-4:30PM.

40. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on 571-272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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41. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. D./

Examiner, Art Unit 1794

/Hai Vo/

Primary Examiner, Art Unit 1794